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## LACE BUGS COLLECTED DURING THE BREDIN-ARCHBOLD-SMITHSONIAN BIOLOGICAL SURVEY OF DOMINICA, B. W. I. (HEMIPTERA: TINGIDAE)

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The recent Drake and Ruhoff "Catalog" (1965) contains no record of a lace bug from the Leeward island of Dominica. Therefore, it is of special significance to record the six species (two new to science) of five genera collected by members of the above survey.

Tabulation of the West Indies (excluding Trinidad) lace bug genera and species, including the two new ones described herein, reveals 49 species (*Caloloma uhleri* Drake and Bruner introduced from Australia) in 17 genera. Of these, 17 species in 10 genera are reported from the Lesser Antilles. This leaves on the Greater Antilles 7 additional genera not represented on the Lesser Antilles—further emphasis of the zoogeographic break between the two island groups.

Each of the five genera represented on Dominica belongs to the subfamily Tinginae and ranges from North to South America, in-

### ZOOGEOGRAPHICAL ANALYSIS OF THE LACE BUGS OCCURRING ON DOMINICA

Genera with number of included species	Number of species		Occurrence of these genera in Western Hemisphere				
	on Dominica	known only from Dominica	Lesser Antilles	Greater Antilles	South America	Central America	North America
<i>Acanthocheila</i> (17)	1	..	X	X	X	X	X
<i>Corythucha</i> (68)	1	..	X	X	X	X	X
<i>Leptodictya</i> (51)	1	1	X	X	X	X	X
<i>Leptopharsa</i> (109)	1	1	X	X	X	X	X
<i>Teleonemia</i> (85)	2	..	X	X	X	X	X
Total number genera	5						
Species	6		2				

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cluding the Greater Antilles. Therefore, their occurrence on Dominica did not come as a surprise.

This paper is based on specimens taken by various members of the survey who were kind enough to take time from their special interests to collect generally and make possible studies by those of us who did not join in the explorations. To these fellow entomologists I owe deep thanks: D. F. Bray; O. S. Flint, Jr., R. J. Gagne; D. L. Jackson; P. J. Spangler; W. W. Wirth. The study itself was aided in part by NSF Grant number GB-791 (96-M). The beautiful illustrations of these graceful and frail insects are by Elsie Herbold Froeschner.

KEY TO THE GENERA OF LACE BUGS AS THEY OCCUR  
ON THE LESSER ANTILLES

(genera in brackets not known from Dominica)

1. Pronotum anteriorly on midline with an elevated, swollen cyst (Fig. 4) ..... 2  
     Pronotum anteriorly on midline without a swollen cyst, sometimes with a tectate (roofshaped) low elevation ..... 5
2. Anteromedian cyst of pronotum prolonged anteriorly, much surpassing apex of head (Fig. 4) ..... 3  
     Anteromedian cyst of pronotum short, subglobose, not exceeding apex of head ..... 4
3. Elytra tumidly elevated near middle of basal third ....  
     ..... *Corythucha* Stal  
     Elytra not tumidly elevated ..... [*Corythaica* Stal]
4. Antennal segment I short, not longer than width of head between eyes ..... [*Caloloma* Drake and Bruner]  
     Antennal segment I long, longer than width of head across both eyes ..... [*Phymacysta* Monte]
5. Side margins of paranota with prominent coarse spines (Fig. 1) ..... *Acanthocheila* Stal  
     Side margins of paranota without spines ..... 6
6. Paranotum projecting obliquely outward (never vertical nor lying on surface of pronotum), containing two or more rows of cells visible from above or below ..... 9  
     Paranotum either with one row of cells and placed vertically, or with several rows of cells and reflexed and lying on surface of pronotum ..... 7
7. Paranotum vertical, containing a single row of cells  
     ..... *Teleonemia* Costa

- Paranotum with several rows of cells, reflexed against the surface of the pronotum ..... 8
8. Scent gland canal distinctly elevated ..... *Leptodictya* Stal  
Scent gland canal absent ..... [*Dictyla* Stal]
9. Outer margin of paranotum angularly expanded; costal area of elytron wide, with five or more rows of cells for most of its length ..... [*Gargaphia* Stal]  
Outer margin of pronotum straight or convexly rounded; costal area of elytron narrow, with only two rows of cells on basal half or more ..... 10
10. Head spine above bases of antennae very long, horizontal, reaching or surpassing apex of antennal segment I (Fig. 3) ..... *Leptopharsa* Stal  
Head spine above bases of antennae very short, never reaching as far as midlength of antennal Segment I ....  
..... [*Vatiga* Drake and Hambleton]

Family Tingidae  
Subfamily Tinginae  
Genus *Acanthocheila* Stal

*Monanthia* (*Acanthocheila*) Stal 1858, p. 61.

*Acanthocheila*: Stal 1873, p. 127.

*Acanthocheila thaumana* Drake and Cobben

Figure 1

*Acanthocheila thaumana* Drake and Cobben 1960, pp. 67, 81.

This species was described from St. Eustatius and St. Martin at the north end of the chain of Leeward Islands.

The 15 specimens taken by W. W. Wirth during March at the mouth of the Layou River and at the Hillsborough estate extend the range to the southern limit of the Leeward Islands.

Genus *Leptodictya* Stal

*Leptodictya* Stal 1873, pp. 121, 127.

*Leptodictya archboldi*, n. sp.

Figure 2

DIAGNOSIS.— The species of the subgenus *Hanuala*, to which this new one belongs, fall into several groups on the basis of color aspects. The present new species falls into the group where the dorsal appearance is fuscous with a large, oval, mediobasal area (occupying the clavi and broad adjacent parts of the coria) milky white. This gen-

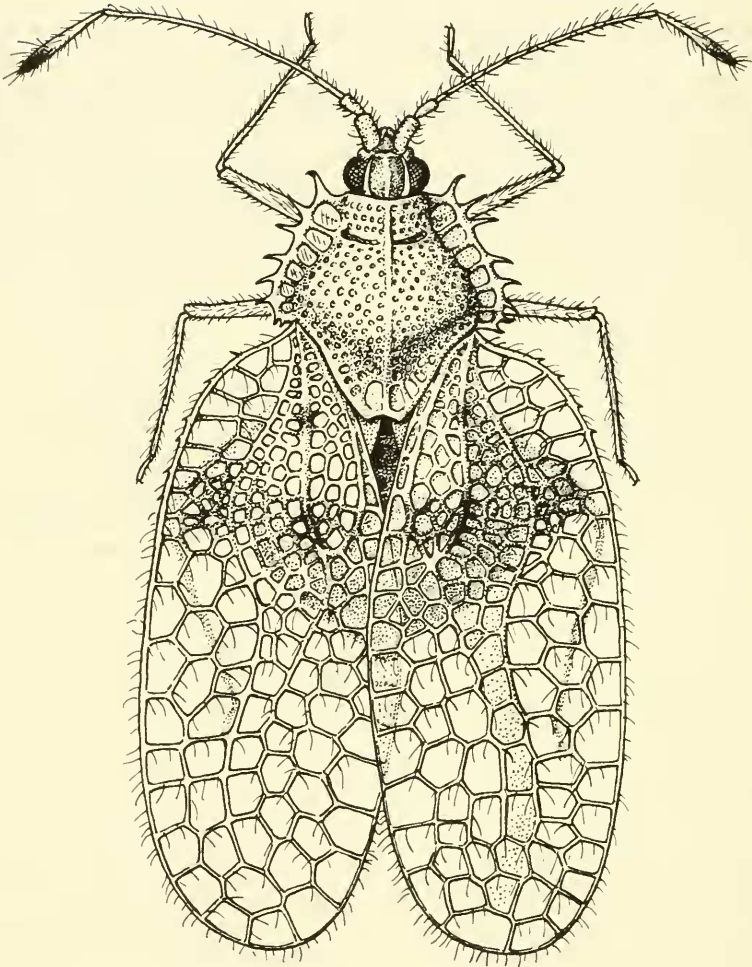


Fig. 1. *Acanthocheila thaumana* Drake and Cobben.

eral pattern results from a darkening of all the veins delimiting the hemelytral areas and the other veins (but not the cells) on the apical half and costal region of the corium; the veins in the mediobasal region are translucent milky white. Within this group, this new species can be recognized readily by the wholly shining black antennae plus the extremely long, mostly blackened head spines.

DESCRIPTION.— Holotype male. Length 3.6 mm., greatest width 1.8 mm. Head with five very long, erect spines: anterior pair reaching apex of antennal segment I, median spine and basal pair longer than the frontal pair, more than twice as long as horizontal length of an eye. Labium surpassing middle coxae.

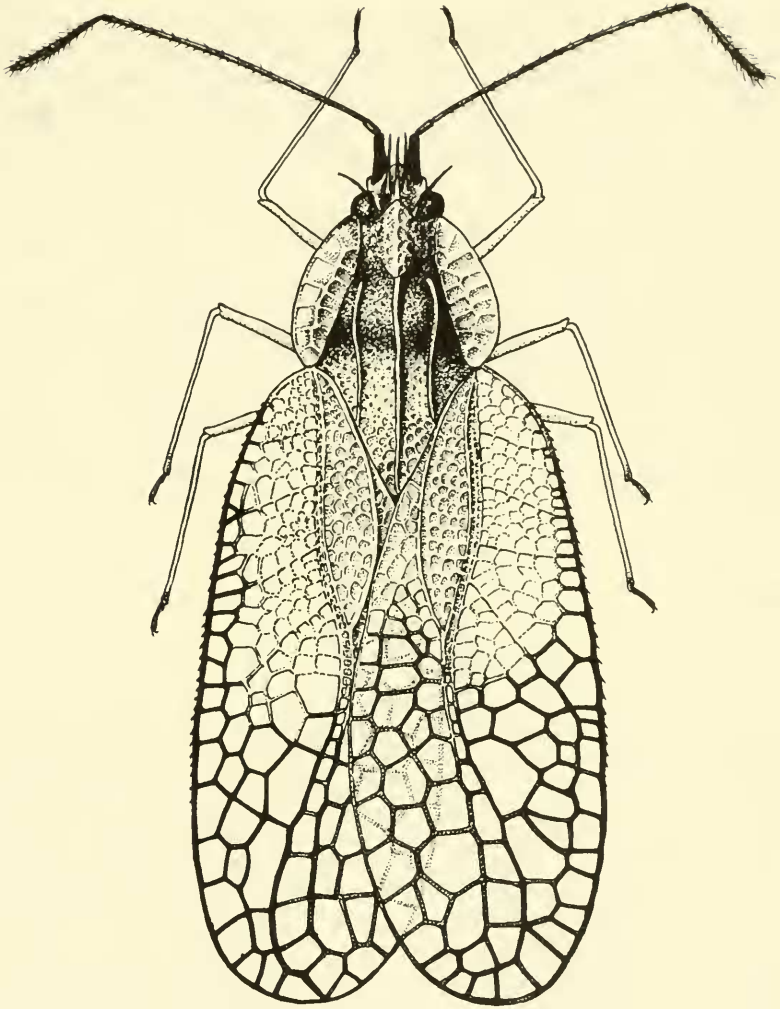


Fig. 2. *Leptodictya archboldi*, new species.

Pronotum tricarinate, each carina uniseriate except median where it is elevated as a multiareolated, compressotectate hood projecting into a short, acute angle over base of head. Paronotum expanded laterally, then suddenly and completely folded back over itself, the original free lateral edge now reaching the dorsal surface of the pronotum, the dorsally exposed surface biseriate; apical half of posterior projection milky white.

Hemelytra slightly widening posteriorly. Basal two-thirds of costal margin finely, distinctly serrate. Costal area broad, mostly abundantly, finely reticulate on basal half and with much coarser



reticulations on apical half; with four, slightly more prominent, oblique veins on basal half. Subcostal area very narrow, biseriate. Discoidal area elongate, narrowly fusiform, about five areole wide at widest point, there less than half as wide as costal area opposite to it; with a prominent, oblique, embrowned vein near middle. Sutural area wide, expanding toward apex. Hind wings slightly surpassing apex of abdomen.

Holotype male: Dominica, British West Indies, Morne Plat Pays, December 10, 1964. Paul J. Spangler, "in base of *Euterpe globosa* frond." (USNM type no. 70218).

Although this genus is essentially a tropical element, three species occur as far north as southern North America. Previously only one was reported for the West Indies (Puerto Rico and Cuba): the bamboo-frequenting form *bambusae* Drake which differs from the Dominican species by its wholly pale antennae and hemelytra.

The species is dedicated to Mr. John D. Archbold, a cosponsor of this biological survey of Dominica and a frequent supporter of scientific efforts.

### Genus *Leptopharsa* Stal

*Leptopharsa* Stal 1873, pp. 122, 126.

#### *Leptopharsa bredini*, n. sp.

Figure 3

DIAGNOSIS.— Within the genus, *unicarinata* Champion and the present new species are the only species with but one pronotal carina discally, the median one; all the other species also possess two lateral discal carinae. Several features separate the two species; but most conveniently, *unicarinata* has the median carina subequal in height and uniseriate for its full length behind the hood, while in *bredini* it is biseriate for a distance behind the hood where it forms an abrupt, nearly semicircular, dorsal projection and then becomes uniseriate.

DESCRIPTION.— Holotype female. Length 3.5 mm., greatest width, 1.6 mm. Color, including antennae and legs shining yellow brown; head (including most of bucculae), anterior and median acetabulae, broad, oblique band extending from tip of discoidal area posteriorly along subcostal area to apex of hemelytron. fuscous to black.

Head short, with three erect, very long spines (length more than twice horizontal diameter of eye): one above each eye and one at middle apex of vertex. Bucculae about as high as vertical diameter of eye, finely reticulate. Antennal segment I shorter than interocular space, about twice as long as segment II, segment III about five times as long as I - II, about three-and-a-half times as long as segment IV. Labium reaching base of metasternum.

Pronotum distinctly and closely punctate, becoming reticulate on posterior process; disc unicarinate, median carina as described above, its anterior hood high, strongly compressed, multiareolate, arising

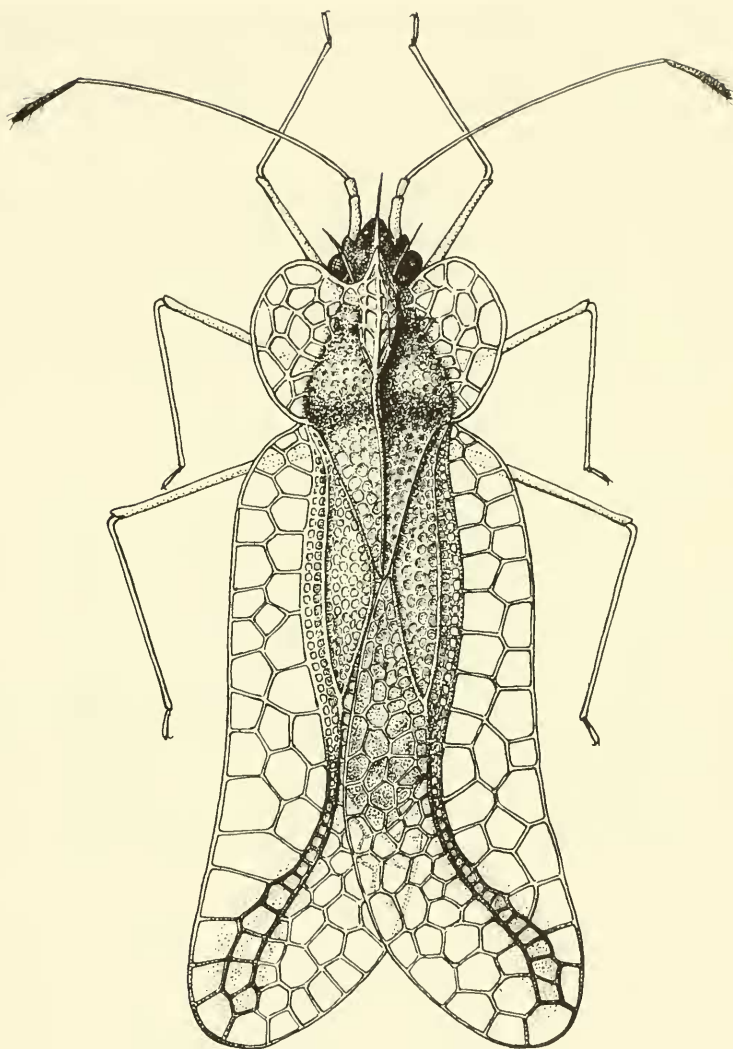


Fig. 3. *Leptopharsa bredini*, new species.

behind calli and extending forward over basal half of head. Paranota developed for full length, about four areolae wide, widest at mid-length, outer margin semicircularly convex. Hemelytra widening posteriorly, apices strongly divaricate; costal area very wide, with two rows of large, subquadrate areolae from base to apex of discoidal area, three areolae in widest part; subcostal area narrow, with two rows of small areolae, vein between subcostal and discal areas very weakly tectate; discoidal area narrowly fusiform, reaching about to

midlength of hemelytron, four areolae wide; sutural area widening posteriorly, on apical half very wide, with four rows of large areolae.

Sternal laminae distinct on meso- and metasternum, uniseriate, parallel on mesosternum, strongly convex laterally and nearly touching posteriorly on metasternum. Hypocostal lamina uniseriate for full length. Legs long, slender.

Holotype female: Dominica, British West Indies, trail 1 mile north of junction of roads to Rosalie and Castle Bruce, April 23, 1966, 1,300 feet, R. J. Gagne (USNM type no. 70219). Paratype: Female, same island, Freshwater Lake, August 25, 1965, D. L. Jackson.

Mr. Bruce Bredin, cosponsor of the present Dominica project, has long been a supporter of scientific endeavors, including earlier Smithsonian explorations in the West Indies; I consider it a privilege to be able to dedicate this species to him.

### Genus *Corythucha* Stal

*Corythucha* Stal 1873, p. 119, 122.

#### *Corythucha gossypii* (Fabricius)

Figure 4

*Acanthia gossypii* Fabricius 1794, p. 78.

*Corythucha gossypii*; Stal 1873, p. 123.

This widely ranging American species has been recorded from a great variety of hosts, including numerous cultivated crops. One extra-survey collection specimen was taken by J. Maldonado Capriles during July 1963 at St. Joseph.

Two series were collected by D. F. Bray: one lot of eight specimens from castor beans at Roseau on March 26 and another lot of three from squash at Southern Chiltern Estate on February 8.

### Genus *Teleonemia* Costa

*Teleonemia* Costa 1864, p. 114.

#### KEY TO SPECIES OF TELEONEMIA ON DOMINICA

1. Basal head spines long and tapering, in dorsal view reaching or surpassing upper margin of antennal sockets  
..... *sacchari* (Fabricius)
- Basal head spines short, cylindrical, blunt, in dorsal view not reaching upper margin of antennal sockets  
..... *prolixa* (Stal)

#### *Teleonemia prolixa* (Stal)

*Lacometopus prolixus* Stal 1858, 65.

*Teleonemia prolixa*; Stal 1873, p. 132.



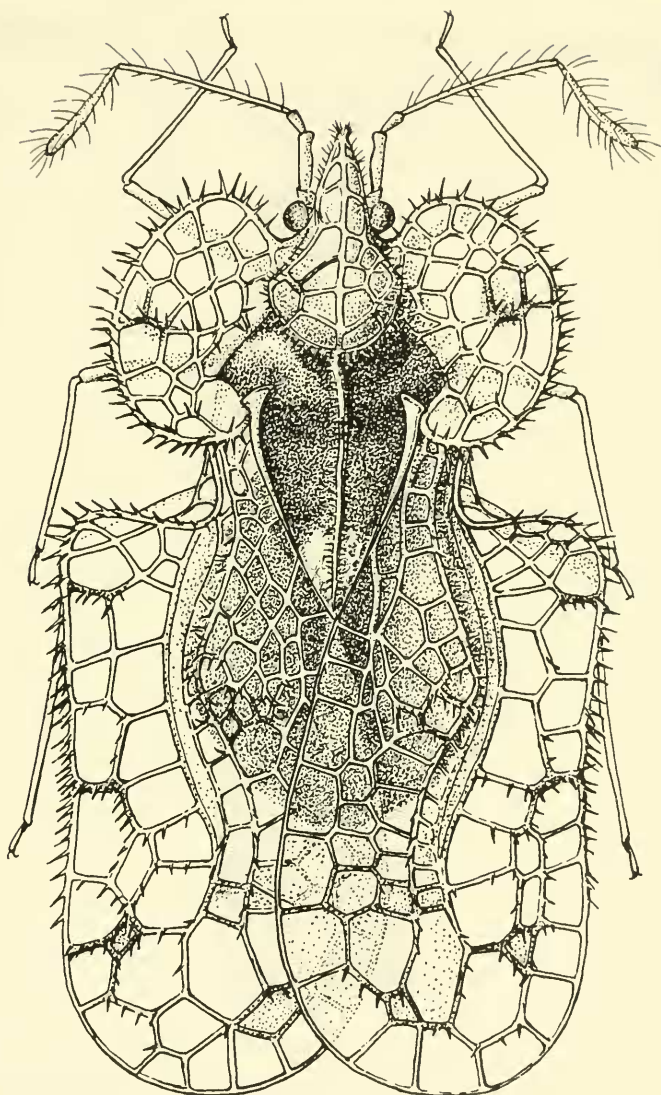


Fig. 4. *Corythucha gossypii* (Fabricius).

The few specimens from Dominica fall within the variations under this name in the Drake collection of lace bugs. Unfortunately, the extent of this variation far exceeds that shown by other species of the genus and involves tropical American material from widespread localities. Until *prolixa* is critically reviewed in a generic revision, the arrangement in the Drake collection is accepted as the standard of comparison and the name is being used here.

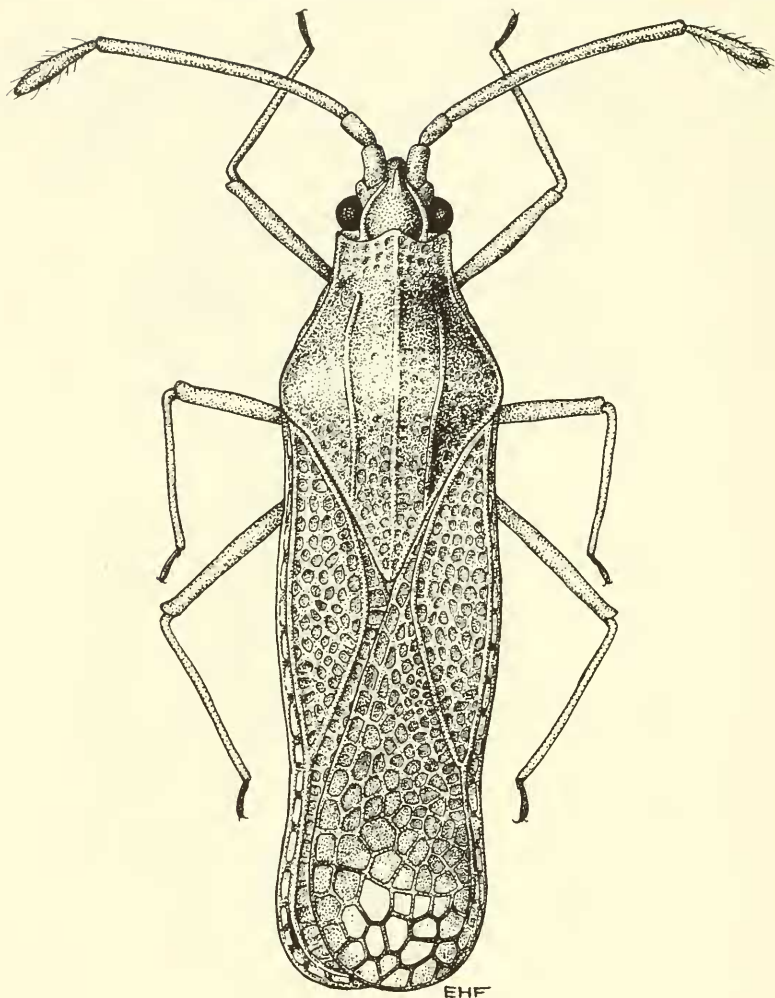


Fig. 5. *Teleonemia sacchari* (Fabricius).

Specimens taken at Benjamin, Clarke Hall and Grand Bay were collected during February, April, and September.

*Teleonemia sacchari* (Fabricius)

Figure 5

*Acanthia sacchari* Fabricius 1794, p. 77.

*Teleonemia sacchari*; Stal 1873, p. 132.

The present concept of this species is based on the very uniform series resting under this name in the C. J. Drake collection of lace

bugs. This concept does not agree with the captions and figures in lands Antilles. There, figure 79c with the short basal head spines is Drake and Cobben's (1960) paper on the lace bugs of the Netherlands entitled *sacchari*. This is in contrast to the entire series of specimens mentioned above; these have the basal head spines long and tapering and reaching the dorsal margin of the antennal sockets.

This lantana frequenting species has been reported from the southern United States south through Central America and the West Indies to Brazil.

A pre-survey collection of this species on Dominica (without specific locality) was made by R. G. Femah, July 3 and 12, 1941. Survey specimens were taken in March and September at Castle Comfort and La Fanchette.

#### REFERENCES

- COSTA, A. 1864. *Annuario del Museo Zoologico della R. Universita di Napoli*. Napoli. vol. 2, pp. 1-176. 4 pls. (dated 1862).
- DRAKE, C. J. AND COBBEN, R. H. 1960. The Heteroptera of the Netherlands Antilles -V, Tingidae (lace bugs). *Studies on the fauna of Curacao and other Caribbean Islands*. vol. 10, no. 54, pp. 67-97.
- DRAKE, C. J. AND RUHOFF, F. A. 1965. Lacebugs of the World: a Catalog (Hemiptera: Tingidae). *U. S. Nat. Mus., Bull.* 243, pp. i-viii, 1-634, pls. 1-56.
- FABRICIUS, J. C. 1794. *Entomologia systematica emendata et aucta, secundum classes, ordines, genera, species, adjectis synonymis, locis, observationibus, descriptionibus*. 314 pp.
- STAL, C. 1858. *Bidrag till Rio Janeiro-Traktens Hemipter-Fauna*. I. Öfv. *Kongl. Svenska Vet.-Akad. Handl.*, vol. 2, no. 7, pp. 1-84.
- . 1873. *Enumeratio Hemipterorum*, vol. 3. *Kongl. Vet.-Akad. Handl.* vol. 11, no. 2, pp. 1-163.